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1.0 Introduction

Welcome and congratulations on buying your new A2B Hybrid/24*, the electric bike that's taking transport in a whole new direction. It's the new revolutionary way to get to work, pop to the shops or just get some fresh air. Compared to jumping in the car, an ebike is a lot more fun, easier to park and will reduce your fuel costs as well as your impact on the environment... as you'll soon find out!

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^{*}A2B Hybrid/24 is termed as 'A2B' throughout the rest of this manual.

2.0 Important information

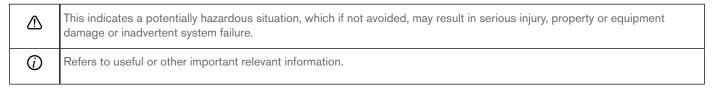
This owner's manual contains important safety, performance and service information.

Please ensure you read this thoroughly before your first ride. Your A2B should be fully assembled and the battery charged by your A2B dealer at the time of delivery. If not contact us immediately as this will void your warranty.

Please ensure that all users of your A2B read and understand the following important information.

- According to national rules a bicycle has to be equipped with two independently working brakes, a bell, head light, tail light, side reflectors on the wheels or integrated reflection stripes on the tyres and front and rear reflectors.
- The A2B is designed for public road use. Don't ride off-road, in water and don't use the A2B to jump in bumpy terrain or for competition events.
- We recommend that you always wear an approved cycle helmet at all times and light or fluorescent clothing at night when riding the A2B.
- Make sure you know and practice the rules of safe and responsible riding. There is always a risk of serious / fatal injury or damage as a result of an accident while riding an A2B. By choosing to ride the A2B you assume responsibility for that risk.
- Your existing insurance policies may not provide accident cover for your A2B. Contact your insurance company or agent for information.
- This owner's manual makes no representation about the safe use of the A2B under all conditions.

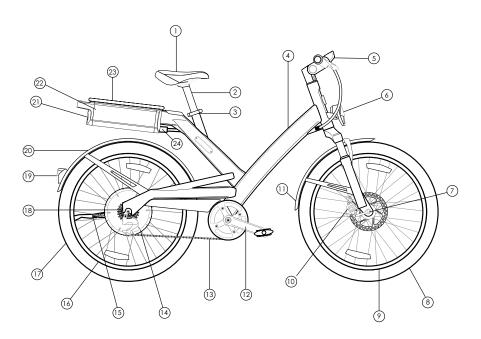
Important symbols



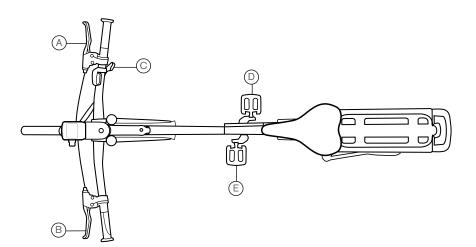
If you have questions or do not completely understand any of the instructions in this owner's manual, please ask your A2B specialist dealer.

3.0 Your A2B

3.1 Components



- 1. Saddle (seat)
- 2. Seat post
- 3. Seat post quick release
- 4. Frame
- 5. Display
- 6. Headlight
- 7. Quick release
- 8. Front wheel tyre
- 9. Front wheel rim
- 10. Front disc brake and rotor
- 11. Front mud guard
- 12. Pedal, crank arm and chain ring
- 13. Drive chain
- 14. Motor
- 15. Kickstand
- 16. Rear wheel rim
- 17. Rear wheel tyre
- 18. Derailleur and freewheel
- 19. Rear light
- 20. Rear mud guard
- 21. Reflector on battery
- 22. Battery
- 23. Rear rack
- 24. Battery plug



- A. Right brake lever (operates rear brake)*
- B. Left brake lever (operates front brake)*
- C. Gear shifter
- D. Right pedal
- E. Left pedal
- * Please note that braking system is opposite, to what is stated in this manual in some countries please check with your local dealer.

3.2 Changing components or adding accessories

Before installing any component or accessory, including a different tyre, make sure that it is compatible with your A2B by checking with your A2B dealer.

Read, understand and follow the instructions that accompany the component or accessory you purchase for your A2B.

As with all mechanical components, the bicycle is subjected to wear and high stresses. Different materials and components may react in different ways to wear or stress fatigue. If the design life of a component has been exceeded, it may suddenly fail possibly causing serious or fatal injuries to the rider. Any form of crack, scratches or change of colouring in highly stressed areas, such as frame, fork and handle bar, indicates that the life of the component has been reached and it should be replaced immediately by an A2B dealer.

A Failure to confirm with compatibility, proper installation, operation and maintenance components or accessories can result in serious or fatal injury.

⚠ Using non-genuine components or replacement parts may compromise the safety of your A2B and void the warranty.

(i) If you change components or add accessories, you do so at your own risk because A2B may not have tested that component or accessory for compatibility, reliability or safety on your A2B.

3.3 Brake lever adjustment

Can you comfortably operate the brakes? If not, take your A2B to an A2B dealer and ask them to adjust the angle of the brake levers. Alternatively, follow the instructions below to adjust the brake lever angle:

- Loosen the bolt underneath the brake lever with an appropriate allen key.
- 2. Adjust the angle to suit.
- 3. Tighten up the bolt underneath, ensuring the brake lever is firmly fixed in place.

(i) Should you need to adjust the brakes themselves, please take your A2B to an A2B dealer to make the required adjustments.

3.4 Adjustment of the seat height

The seat height may have to be adjusted. Please ask your A2B specialist dealer to adjust the seat height before your first tour. You may also adjust the seat height on your own as indicated below:

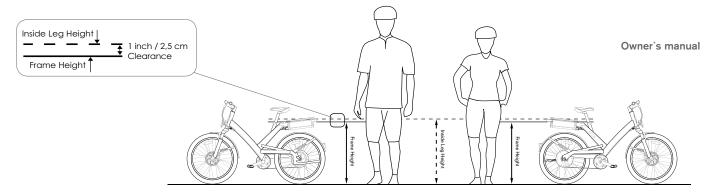
Determination of the correct driver's seat height

There are several ways of determining the correct seat height; the method which can be carried out without any further auxiliary means is described in the following: Sit on the saddle and stretch one leg. Put your foot's heel on the pedal which is on the lowest point of the crank turn. Your knee should now be almost straightened.

If you are sitting straight on the saddle while having this position, the saddle's height is correct.

Of course, you then do not drive with legs stretched. If you put your foot on the pedal while having the correct driving position (ball of foot and metatarsophalangeal joint above the pedal axle), the knee will remain slightly angled also on the lowest point of crank turn if the saddle height has been adjusted correctly.

A short test ride is recommended to find out if the saddle is too high. If the pelvis tilts to the right and the left in the rhythm of pedalling, the saddle is too high. If the saddle is too low, you will usually find it out only after many kilometres through pain in the knees.



Height adjustment

- The seat height can be adjusted by loosening the quick release for the saddle post.
- Position the saddle at the desired height. Do NOT position the saddle higher than the minimum insertion mark located on the saddle post BY NO MEANS.
- 3. Push the lever of the quick release towards the frame, until it will be closed again. The lever must not stick out to avoid danger of injuries. The lever is safely attached if you must use efforts to push it into the closed position. The efforts are appropriate if the lever leaves a mark on the palm of your hand when pressing. A properly closed quick-release cannot be moved anymore unless it is reopened as specified above. If you can move the mechanism slightly, open the lever of the quick release, turn the adjusting nut by another 180° and try again.
- After height adjustment, check if the saddle cannot be moved in any direction.

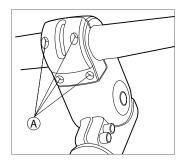
- An improperly attached saddle may lead to severe or even fatal injuries. Ensure that the saddle clamp screw (saddle post saddle) has been tightened using 27 Nm.
- This user manual does not express any guarantee as to the safe use of the A2B under all conditions.

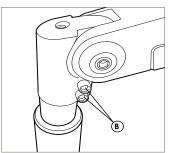
3.5 Handle bar adjustment

- 1. Loosen the bolts (A) using an appropriate allen key.
- 2. Position the handle bar symmetrical to the bar stem.
- 3. Turn the handle bar to the desired angle.
- 4. Tighten the bolts consistently to 5 Nm.

3.6 Bar stem alignment

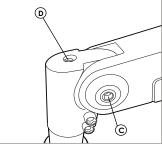
- 1. Loosen the bolts (B) using an appropriate allen key.
- 2. Once loose, align the stem with the front wheel.
- 3. Once aligned, tighten the bolts consistently to 15 Nm.





Bar stem angle adjustment

- 1. Loosen bolt (C) using an appropriate allen key.
- 2. Position the stem to the desired angle.
- 3. Tighten bolt (C) to 18.5 Nm ensuring the stem is aligned to the front wheel.



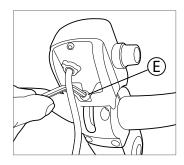
(i) Caution: this is an A-head stem, the top screw (D) is preloaded with 1-2 Nm and does not adjust the handlebar stem. Trying to tighten bolt (D) can damage the head set bearings.

A Failure to correctly secure the bar stem can result in serious or fatal injury. Ensure there is no play in the steering and that the steering is working smoothly. Should you need further advice to adjust the headset, please contact your A2B dealer.

Owner's manual

3.7 Display adjustment

- 1. Loosen bolt (E) on the rear side of the display using an appropriate allen key.
- 2. Position the display to the desired angle.
- 3. Tighten the bolt (E) to 6 Nm.



4.0 Understanding your A2B

After having read this section, if you are still unsure, please ask an A2B dealer to explain any functions or features that you do not understand before your first ride.

4.1 A2B Overview

The A2B has a 'true pedal assist' function, this means the motor engages only when the rider is pedalling. So you can get places under your own steam yet have the comfort of the electric motor giving you that extra boost along the way.

The A2B is equipped with a Torque Sensor, which means as soon as you start to pedal, you'll feel the motor kick in to complement your pedalling – making riding an effortless pleasure.

4.2 Starting and stopping

- Wear your helmet and select a quiet area away from cars, other cyclists, obstacles or other hazards
- 2. Make sure that the battery is fully recharged.
- 3. Power ON the electronic system by using the E-key (see section 4.3).
- 4. Raise the kickstand into the riding position. DO NOT sit on the A2B while it is supported by the kickstand, you will damage the kickstand and, possibly the frame.

- 5. Mount your A2B and get comfortable.
- 6. Apply motor power by pedalling the A2B.
- 7. Test the brakes at slow speed. The right brake lever actuates the rear brake and the left brake lever actuates the front brake. Applying brakes too hard can lock up a wheel, which could cause you to lose control and fall.

(i) Remember that there is a power cut-off switch embedded into the right brake lever. When you apply the right brake, power to the motor will turn OFF. Therefore, do not hold the right brake lever when you want the motor to run.

 Check out the handling and response of your A2B. Familiarise yourself with how the suspension responds to application of the brakes and shifts in rider weight.

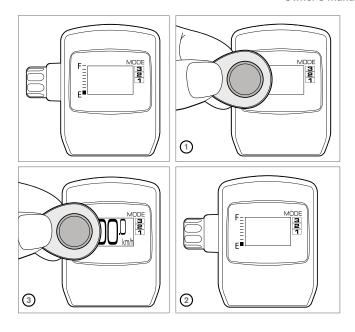
4.3 Display and electronic key

Turning ON/OFF the electrical system with the electronic key.

Your A2B is protected by an electronic key (E-key). The system needs to be activated before your ride.

- 1. Hold the E-Key directly above the display.
- The display will light up. Remove the E-key as soon as the A2B logo appears.
- At the end of your trip: to deactivate the system hold the E-key above the display until it turns off. Remove the E-key now. The system is deactivated.

ib By switching on the system with the E-Key display, battery and controller will wake up from sleep mode. In rare cases not all components will wake up the first time (e.g. no motor support), turn off the system and try again.

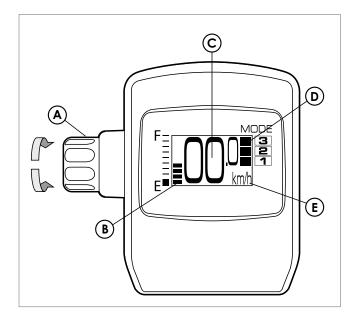


4.4 Display - functions

Functions and menu description

- A. Knob button (turn and push function)
- B. Battery state of charge indicator
- C. Speed indicator
- D. Assist level indicator
- E. Speed unit (km/h or mph) indicator

① Consider the E-key as you would a car or door key. We recommend that you attach the E-key to your other keys you carry with you.



4.5 Assist level pre-selection

You have the choice between 3 different assist level modes. Which assist level mode is actually selected is shown on the display at the right upper side.

Select the assist level:

Push the knob button to enter the menu.

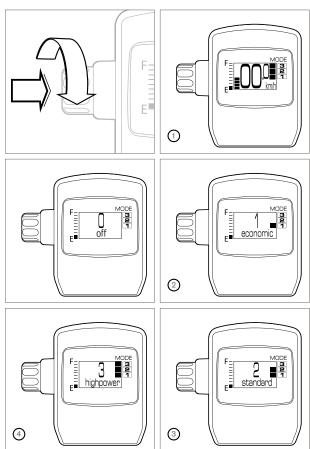
Turn the knob (counter clockwise) to change between the different assist modes.

Once you have reached the correct assist level, push the knob to confirm your selection.

The display switches back to the standard screen with the new assist level set.

Standard display

- 1. **Mode 0** No power assistance, all display functions will work.
- Mode 1 Minimal power assistance, ideal for saving battery power, maximum range.
- 3. **Mode 2** Standard power assistance, normal power, average range.
- Mode 3 Extra power assistance, maximum power, reduced range.



4.6 Setup (change between km & miles).

Push the knob button to enter the menu.

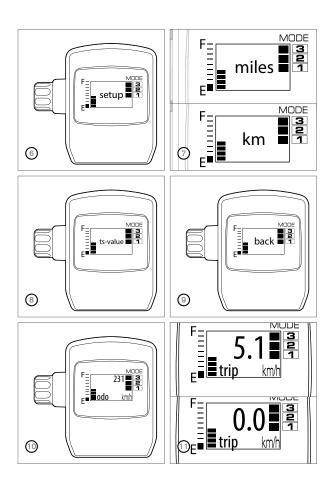
Turn the knob untill **setup** (6) appears. Now push the knob for 2 seconds to enter the setup menu. You can now **change between km and miles by pushing the knob** (7) again for 2 seconds. Please wait, the system confirms your selection automatically.

(i) You enter the **ts-value** screen (8) by turning the knob in the setup menu. This submenu is for servicing and allows dealer and service technicians to measure the correct function of your torque-sensor. To exit the setup menu from here **Turn the knob** untill it shows **back** (9) and confirm with a push to return to the standard screen again (1).

4.7 Switching between Odo & Trip

Push the knob button to enter the menu.

Turn the knob untill **odo or trip** (10/11) appears. Please wait, the system confirms your selection automatically. To reset trip: push the knob for two seconds once you are on the trip screen (11).



If you leave your A2B inactive for 10 minutes, the system will switch off (including lights) and will go into sleep-mode.

4.8 Error Codes

If an error occurs, the warning sign (!) will indicate that an error has occurred and one of the following error codes will be shown on the display:

- 01 HARDWARE_Brake_SET: Over current hardware
- 02 RECUPERATION: Error regenerative braking
- 03 FAST_OVER_VOLTAGE: Fast overvoltage
- 04 FAST_UNDER_VOLTAGE: Fast undervoltage
- 05 SLOW OVER VOLTAGE: Slow overvoltage
- 06 SLOW_UNDER_VOLTAGE: Slow undervoltage
- 07 OVER_TEMP_135: Motor temperature over 135 °C
- 08 OVER_TEMP_INT: Over temperature controller
- 09 CORRUPT HALL VALUE: Error motor signals
- 10 WRONG HALL ORDER: Error motor rotatating direction

- 11 Not applicable
- 12 RECOVER WHILE DRIVE: Reset while riding
- 13 I_OFFSET_OVER_LIMIT: Current offset is over limit
- 14 I_OFFSET_UNDER_LIMIT: Current offset is under limit
- 15 TORQUE OFFSET OVER LIMIT: Torque offset is over limit
- 16 TORQUE_OFFSET_UNDER_LIMIT: Torque offset is under limit (See graphic below)

© Error messages will automatically be reset if the error ceases to occur. Please contact your A2B dealer in the case of a permanently displayed error message.

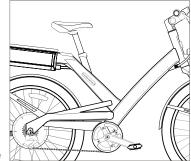


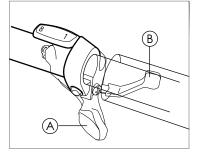
4.9 Gears

Your A2B has a rear derailleur controlled by the gear shifter on the right hand side of the handlebar.

To shift gears, pedal at a steady pace and push the shift lever (A) or (B) until you find the gear most comfortable for you and the current conditions.

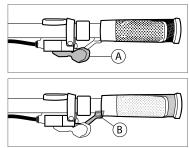
To make pedalling easier (when encountering a hill), push up lever (A) in riding direction to down-shift, this will also make you pedal faster to achieve any given speed. Push up lever (A) against stop to down-shift two gears at once.





To ride faster (on a flat section or a downhill), push up lever (B) towards you to up-shift, allowing you to pedal more slowly for a given speed, but with more effort required.

Never pedal backward while shifting gears. The chain could derail and you could lose control, resulting in an accident that could cause serious or fatal injury and/or property damage. Always pedal forward at a steady pace when shifting gears.



The rear derailleur operates independently of the motor. Using the derailleur control, adjust the gear setting to find a gear that makes pedalling comfortable while assisting the motor.

4.10 Light

To switch the light on and off twist the switch on the headlight to on or off position.

You can ride your A2B without attaching the battery. The motor will generate power for the lights.

4.11 Luggage carrier

Your A2B is equipped with a durable luggage carrier. In case you need to carry luggage or any goods with your A2B, please carefully read the enclosed instructions before using the luggage carrier.

- The luggage carrier is attached to the rack tube of your A2B by 4 x T25x18 torx flat head screws. If you are frequently using the luggage carrier, always check that the screws are secured tightly at torque value 6-8 Nm.
- 2. The maximum weight that could be carried is 10 Kg.
- Please ensure that the luggage is fastened securely so that it can not fall off while riding. Take care that loose straps or other items can not get caught by the spokes or wheels while riding.
- The luggage carrier is not designed for carrying a second rider or the attachment of a child seat. It should also not be used to pull a trailer.
- The permissible load of your A2B should not be exceeded, please refer to the specification section in the owner's manual.
- 6. Do not modify the luggage carrier in any case of usage.

- 7. Distribute the weight of your luggage or goods evenly between the two sides of the luggage carrier.
- 8. Please be aware when the luggage carrier is loaded, your A2B may behave differently, especially when steering or braking the bike.
- Once you have attached your luggage to the luggage carrier, please be aware that rear light and reflector may be obscured by your luggage.



Failure to observe these instructions can result in serious or fatal injury.

4.12 At the end of your ride

If you have any questions, or if you feel anything about your A2B is not as it should be, ask your A2B dealer before you ride again.

4.13 Your range

Factors affecting range:

- Pedal assist mode
- Battery state-of-charge
- Use of gears appropriate to speed
- Tyre inflation pressure
- Front wheel bearings and both brakes (tight bearings or a dragging brake shoe reduces range)
- Rider weight (it takes more battery power to accelerate a heavier person)
- Your speed and wind conditions (range is reduced when pedalling hard against a strong wind)
- Terrain (travelling on a soft surface or climbing a hill uses more power)
- Frequent starts and stops (full power from a standing start draws the most amperage from the battery)

Maximise your range

- Fully charge your battery before each ride
- Check tyre pressure regularly and inflate to the pressure of 2.8 bar (40 psi) for front tyre and rear tyre
- Have your A2B serviced periodically to ensure that the wheel bearings turn freely and both brake discs do not bind the brake shoes when the brakes are not applied
- Minimise the weight that you carry
- Ride at slower speeds
- Use the economy mode as much as possible and support the motor by pedalling with your own power
- Keep the chain and derailleur lubricated with bicycle recommended chain spray

5.0 Battery use, storage and disposal

5.1 The battery & charger

Only use a battery supplied by A2B, if you need a replacement battery, please also purchase this from A2B.

Use of any other battery not supplied with your A2B Will void the warranty and may cause damage to the electrical system and the hub motor.

Improper use and poor storage of this battery will void the warranty and may cause serious or fatal injury or other hazardous situations including fire and property damage.

Improper use includes: using this battery with any other vehicle or appliance, subjecting the battery to intense physical shock or severe vibration, creating a short circuit of the discharge terminals of the battery.

Poor storage includes: storing near excessive heat and/or open flames, long term exposure to sunlight.

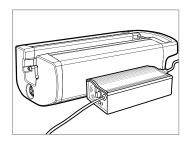
Use only the battery charger supplied with this battery. Use of any other battery charger will void the warranty and may cause damage to the battery, serious or fatal injury and/or other hazardous situation.

Improper use of this battery charger battery will void the warranty and may cause serious or fatal injury or other hazardous situation including fire and property damage.

Improper use includes: blocking the fan vent on the charger whilst the battery is charging as this will cause overheating, subjecting it to intense physical shock or severe vibration.

The battery charger supplied with this battery is for INDOOR use only.

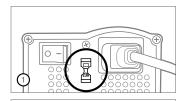
Avoid any contact with water or other fluids. If the battery, charger or any connections become wet, immediately unplug the charger and thoroughly dry all components prior to charging the battery.

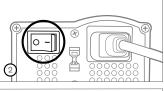


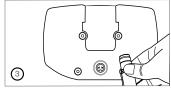
5.2 Charging the battery

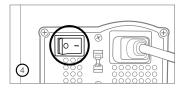
Your A2B dealer should provide a fully charged battery upon delivery of your A2B, should this not be the case, please ensure that prior to its first use, you charge the battery supplied with your A2B for at least 12 hours.

- 1. Check the Voltage Selector switch on the charger to ensure that it is set to your local voltage (230V for Europe).
- 2. Plug the charger into the wall outlet, ensuring the charger is turned OFF (0 equals off 1 is On)
- Carefully align the connector pins and connect the charger to the battery by plugging the connector into the charger socket.
- 4. Turn ON the charger using the ON/OFF switch on the charger.





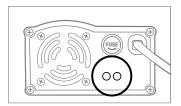




5. LED Indications:

- The Power LED will illuminate RED when the charger is plugged into a wall outlet and the ON/OFF switch is in the ON position.
- The Indicator LED will illuminate AMBER while the charger is charging the battery.
- The Indicator LED will change to GREEN when the battery is fully charged.
- 6. When charging is complete (the Indicator LED is GREEN), turn OFF the charger using the ON/OFF switch on the charger.
- 7. Unplug the charger from the wall outlet then carefully unplug the charger from the battery pack by pulling the connector out of the charger socket.
- 8. Your battery is now ready for use.

(i) NOTE: The battery will not take a charge if you connect the battery when the charger is switched on.



5.3 Battery charging

Charging times

Hours

Before using battery for first time Fully discharged

12 4 - 5

To maximise battery life, recharge as soon as possible after every use.

Avoid leaving the battery charger plugged into your battery for more than 12 hours at a time. Once the battery is fully charged, unplug the charger from the wall outlet then carefully unplug the charger from the battery pack.

Avoid charging the battery at a temperature lower than 0°C or over 40°C. If possible charge the battery at room temperature.

(i) You may recharge the battery at any time, regardless of its state-of-charge. As your battery ages, it will gradually lose capacity. With proper care and maintenance, your battery will retain up to 80% of its capacity over at least 500 discharge/recharge cycles. As capacity diminishes, you will notice a gradual drop-off in maximum range capability. When range falls to an unacceptable level, contact your A2B dealer for a replacement battery.

Low battery charge

The motor controller and battery management system (BMS) are designed to turn off the power to the motor when the voltage of the battery drops to a predetermined point. This is to protect the battery from the harmful effects of over-discharge.

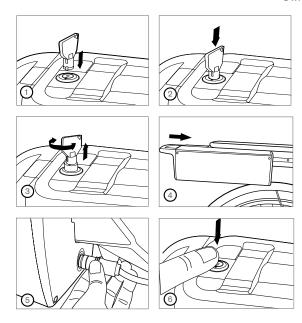
When the power turns off due to a low battery, plug the battery into the charger supplied with your A2B to recharge the battery within 3 days. It will take 4 - 5 hours to fully recharge a completely discharged battery. If you have any questions about this battery or its usage, contact your A2B dealer.

Never attempt to use remaining power once the BMS has switched off the battery. You will damage your battery.

5.4 Attaching and connecting the battery to your A2B

Prior to its first use, charge the battery supplied with your A2B for at least 12 hours.

- 1. Align the key to the slot of the battery lock and insert the key.
- 2. Press the key carefully down.
- Turn the key in any direction 180° till the lock snaps out. Remove the key.
- 4. Carefully align the battery to the battery rails under the luggage carrier and attach the battery by pushing the battery in riding direction against the stopper.
- Connect the battery to the A2B via the large connector. Carefully align the tab and pins of the connector to the socket on the battery and plug in.
- 6. Make sure that the battery is attached correctly and lock the battery by pushing down the head of the lock till it snaps.



5.5 Battery Storage

Disconnect the battery from the bike and store the battery in a cool (10°-21°C, 50°-70°F), dry place. Avoid exposure to direct sunlight.

Charging instructions for storage	Hours
Before storing battery - half charge	2
Half re-charge at least every	2
90 days of storage	

⚠ Failure to follow these battery storage charging instructions will void the warranty.

5.6 Battery Disposal

DO NOT dispose of the battery as household waste. Dispose of, or recycle according to local authority guidelines or contact your A2B dealer for guidance.



6.0 Important pre-ride safety information

Ensure that you and your A2B are both ready for safe and enjoyable use.

ALWAYS wear an approved bicycle helmet. If you lend your A2B to someone else – make sure you also lend them an approved helmet.

NEVER carry a passenger. Overloading your A2B with a second rider can lead to severe injury or death.

OBEY all traffic laws. Always ride on the correct side of the road, with and not against the flow of traffic.

Watch out for car doors. Be aware of the possibility of car doors opening into your path.

Be extra careful in wet conditions. In wet conditions it might take double or triple the distance you need to stop your A2B. Ride slower, anticipate your stops and apply the brakes earlier. Wet roads are slippery – take corners carefully.

Make sure you are seen. In poor light conditions and at night, wear light coloured clothing, preferably with reflective strips.

Ride attentively. Watch out for both moving and stationary vehicles.

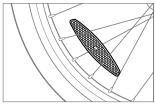
Special note for parents or guardians

As a parent or guardian, you are responsible for the activities and safety of the child when they are using the A2B. You need to make sure that:

- The A2B is properly fitted to the child.
- It is in good repair and safe operating condition.
- You and your child have learned and understand the safe operation of the A2B.
- You and your child have learned, understand and obey local motor vehicle, bicycle and traffic laws.
- You and your child apply the common sense rules of safe and responsible riding.
- You and your child have read this manual, reviewed the warnings and the A2B functions and operating procedures with your child before letting them ride it.

Check your A2B before every ride.

Do a 'walk around' of your A2B before every ride checking brakes, tyres and the tightness of all the important fasteners. Have your A2B checked by an A2B dealer at LEAST once a year. Your safety depends on the roadworthiness of your A2B.

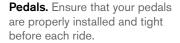


Reflectors. Your A2B has reflectors to make you more visible at night. Ensure they are in place, properly positioned and clean before each ride.

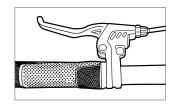
Lights. Your A2B has a front light and rear tail light to make you more visible at night. Ensure they are functional and clean before each ride.

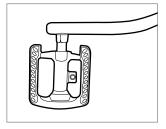
Brakes. Check your brakes before each ride. Right brake lever it takes more battery power actuates the rear brake and the left brake lever actuates the front brake.

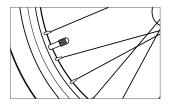
Brake pads. When checking your brakes, it is important to check the full brake system. Brake pads are subject to normal wear and tear and over time wear down. Brake pads should never be worn down to their limit. Ask your A2B dealer to check and replace brake pads.



Saddle. Ensure that your saddle is properly adjusted and tight before each ride (see section 3.4).









Tyre pressure. Your A2B features heavy duty inner tubes to help avoid flat tyres. However, bicycle tyres normally lose pressure over time.

An under inflated tyre can cause premature tyre failure, and will require significantly more energy (electric and human) to propel your A2B. Low tyre pressure will significantly reduce the range under electric power. The recommended tyre pressure for the front wheel and rear wheel is 2.8 bar (40 psi).

⚠ Quick release. Make sure that your front wheel quick release is

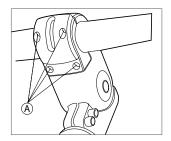
properly adjusted and tight. Failure to properly adjust and lock your front wheel quick release may result in the wheel falling off while riding which could result in serious or fatal injury and/or property damage.

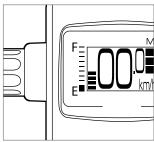
Please ensure, that the bolts of the handle bar (see section 3.5) and of the bar stem (see section 3.6) are tightened with the correct torque.

The 4 allen screws (A) for the handle bar clamp have to be it takes more battery power tightened with 5 Nm torque.

Battery. Check the display prior to setting off on your journey to ensure the battery has enough charge to easily last your journey.

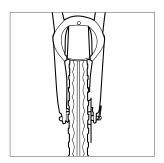
(i) If you don't understand any aspect of the assembly, use and care of your A2B, please ask your A2B dealer.





7.0 Maintenance

Have your A2B checked by an A2B dealer at least once a year.



7.1 Wheels

The front and rear wheels should be centred in the fork and frame. Wheels should be checked regularly for proper spoke tension and rim alignment. DO NOT ride your A2B if it has broken or missing spokes. Wheels should rotate smoothly without wobbling from side-to-side or up-and-down.

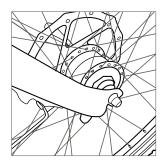
7.2 Hub bearings

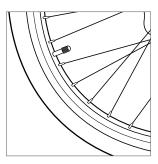
Check:

- the hub bearing adjustment periodically by lifting the wheel off the ground and spinning it and try to move the rim from side-toside between the fork and frame.
- No lateral movement should occur. If you detect lateral movement in either wheel, the hub bearings must be adjusted or replaced.



The rims must be smooth, without cracks, bulges or flat spots. Take your A2B to your A2B dealer to repair and/or adjust your wheels if necessary.







7.4 Drive chain

Your A2B has a high quality chain that needs to be cleaned and lubricated regularly with bicycle industry approved synthetic lubricant.

7.5 Brakes

Check cables for signs of wear and fraying. Squeeze the brake lever firmly and check for proper brake function. Ensure rotors are free of foreign substances and oils. Brake pads should never be worn down to their limit, replace as necessary.

Should your brake pads appear to be worn down or your brakes are not as responsive as they used to be, ask your A2B dealer to check and replace brake pads. Brakes lose effectiveness when wet.

If riding in wet weather is unavoidable, remember that stopping your A2B will require extra distance. Ride slower, keep a greater interval between yourself and other traffic, and begin braking sooner than normal. Failure to take these precautions could lead to an accident causing serious or fatal injury and/or property damage. If you are uncertain about any aspect of the brake operation under any condition, ask your A2B dealer.



Brake discs and brake pads must be free of oil and grease.

7.6 Tyres

Check tyres for any damage, cracking, unusual or excessive wear. The tyre should be properly seated in the rim and the fit of the tyre bead in the rim should be periodically checked. Check for foreign objects in the tyre tread and that the valve stem is straight in the rim.

Damaged or worn tyres should be replaced immediately. Take your A2B to an A2B dealer or a qualified bicycle mechanic to repair and/ or replace your tyres if necessary.

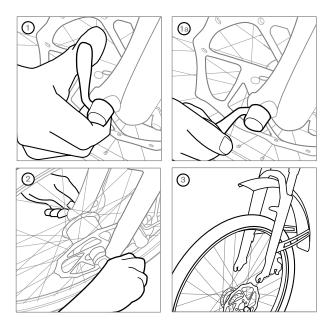
In the unlikely event of having a flat tyre you need to know the correct procedure for removing and re-installing the front or rear wheel.

7.7 Removing and re-installing wheels

Removing front wheel

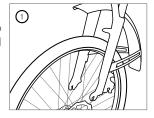
- 1. Release the front hub quick release by rotating the quick release lever away from the hub until it is fully open.
- Turn the adjusting nut on the opposite side of the hub from the quick release lever ANTI-CLOCKWISE until the nut and quick release lever body clears the safety protrusions on the fork tip.
- 3. The front wheel can now be removed from the bike.

Nour A2B has a quick release front (only) hub for easy wheel removal and installation (diagram 3). Please follow the instructions provided for the quick release mechanism to ensure proper use. Failure to properly install this quick release front hub may result in the front wheel falling off while you are riding. This could result in serious or fatal injury and/or property damage. If you are uncertain about any aspect of the assembly and adjustment of your A2B, ask your A2B dealer.



Re-installing front wheel

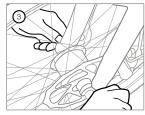
 Position the wheel in the front fork so that the quick release lever is located on the left side of the front fork.



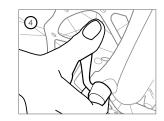
 Move the quick release lever to the OPEN position (lever curves away from the hub) and position the wheel in the front fork so that the axle is located in the fork drop-outs.



 Turn the adjusting nut on the right side of the hub clockwise such that you feel resistance to closing the lever when the lever is parallel to the centreline of the hub.



4. Firmly grip the fork with your left hand, and push the lever over to the closed position towards the fork, ensuring that it does not protrude so as to cause injury to the rider. The lever is securely tightened when it takes a significant amount of force to



position it in the closed position. The appropriate amount of force necessary to close the lever when it is properly adjusted will result in an imprint of the lever in the palm of your hand. Once closed, the OPEN designation on the lever will no longer be visible. When properly closed, it is impossible to move unless you open it again by reversing the steps above. If you can easily move it, open the quick release lever and tighten the adjusting nut another 180° and try again.

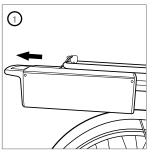
5. Ensure that the brake disc is correctly inserted into the brake callipers and is correctly adjusted.

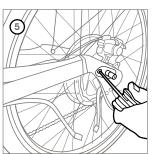
⚠ If you are unsure about this brake set-up and adjustment procedure, please take your A2B to your A2B dealer and ask for assistance in adjusting the brakes.

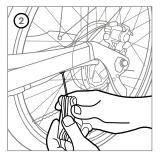
Improperly adjusted brakes may cause reduced braking performance, leading to an accident that could result in serious or fatal injury and/or property damage. DO NOT ride your vehicle if you are not confident that the brakes are working properly.

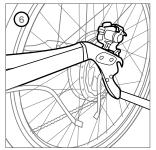
Removing rear wheel

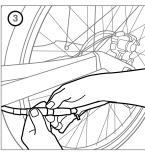
- 1. Ensure that the battery is disconnected.
- 2. Remove the cable retaining clips using an appropriate allen keyalso located on the underside of the left hand chain stay.
- 3. Disconnect the motor power and motor controls connectors.
- 4. Using a 19 mm spanner, loosen and remove the hubaxle nuts.
- Loosen and remove the torque arm retention bolt from the left hand side drop out.
- 6. Remove the torque arm from the A2B by sliding it off the axle.
- 7. Remove the rear wheel by sliding it out of the frame while disengaging the chain from the freewheel.

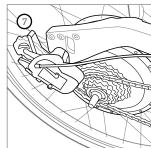


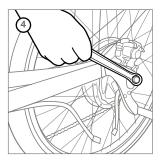












Re-installing rear wheel

Reverse the removal instructions (7 -1).

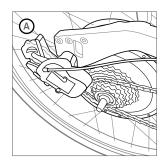
Re-install the torque arm. Failure to do so will result in damage to the frame.

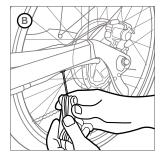
- A. Ensure that the rear wheel is properly centred in the frame before securely tightening the axle nuts to 60 Nm.
- B. Ensure that the brake disc is correctly inserted in the brake calliper, and the wheel rotates freely without interference from the brake shoes.

⚠ If you are unsure about this brake set-up and adjustment procedure, please take your A2B to your A2B dealer and ask for assistance in adjusting the brakes. Improperly adjusted brakes may cause reduced braking performance, leading to an accident that could result in serious or fatal injury and/or property damage. DO NOT ride your A2B if you are not confident that the brakes are working properly.

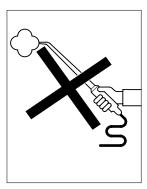
Ensure correct replacement of the chain on the front and rear chain rings.

Install the cable clips for the motor cable to the frame.





8.0 Cleaning the vehicle



Rubber and plastic parts could be damaged by aggressive or penetrating cleaning agents or solvents.

After cleaning and before beginning your ride, always test your brakes!

⚠ Do not use any steam or highpressure cleaning devices! The high water pressure can damage the gaskets, the battery and the entire electrical system.



To wash, use only a soft sponge and clear water.

Polish only with a soft cloth or chamois! Do not wipe off dust and dirt with a dry rag (otherwise you may scratch the varnish and the panelling).



① Do not use paint polish on any of the plastic parts.

After longer rides, thoroughly clean the A2B and preserve with a commercially available anti-corrosion agent.

① In the interests of environmental protection, we would ask you to use care products sparingly and to only use such products that have been labelled 'environmentally friendly'. If the vehicle will be used during the winter months, road salt may cause considerable damage.

① Do not use warm water - as this can increase salt corrosion. At the end of the trip, immediately clean the vehicle with cold water; thoroughly dry off the vehicle; treat parts subject to corrosion with anti-corrosion agents on a wax basis.

9.0 Troubleshooting

No power? Here are a few suggested solutions. If they do not solve your problem, ask an A2B specialist dealer.

Problem	Possible cause(s)	Solution
The A2B will not switch on.	1. The battery is dead.	Recharge the battery. See sections 5.2 and 5.3.
A2B switches on but there is no motor assistance (display lights up and charge indicator shows charged battery).	1. A brake lever is applied.	Do not apply the brakes when starting the A2B. Ensure that the brake levers are aligned completely to the front.
	2. No power level has been pre-selected.	Pre-select a power level (see section 4.5).
	3. The controller did not wake up after switching on (note: the light does not illuminate even though the light is switched on).	Repeat the switching on procedure. Should the controller still not wake up, disconnect the battery from the connector and reconnect the battery after waiting 3 seconds. Repeat the switching on procedure.
	The connector for the power supply to the motor is unplugged.	Ensure that the connector to the motor is fastened securely.

10.0 Technical information

General performance specification

- Overall Dimensions 17" 1720 mm x 650 mm x 1000 mm
- Overall Dimensions 20" 1745 mm x 650 mm x 1070 mm
- Curb weight without battery 23.3 kg (51.4 lb)
- Curb weight with battery 27.4 kg (60.4 lb)
- Maximum permitted load 140 kg (310 lb)
- Maximum permitted load on rear carrier 10 kg (22 lb)
- Maximum speed with motor support, flat level ground: 25 km/h (15.5 mph) NOTE: regulated
- Maximum range, flat level ground, no head or tail wind, no starts/ stops: 50 to 70 km (31 to 43 miles)
- Operation conditions: Temperature -5 to 40 °C (+23°F to 104°F), maximum humidity 80%

Electrical specification, battery

- Battery chemistry: lithium ion
- Nominal voltage: 36 V
- Normal voltage operating range: 30 to 42 V
- Nominal capacity: 10 Ah
- Charging method: CC/CV (Constant current/Constant voltage)
- Weight: 4.1 kg (9.0 lb)

Battery management system (BMS)

- Controls and stops over-charging
- Controls maximum charge current
- Controls over-discharge amperage
- Controls over-discharge voltage
- Over temperature shut-off
- Provides cell-to-cell balancing function

Electrical specification, battery charger

- Input voltage: AC 100 240 V, 50 60 Hz
- Output voltage: 42 ± 0.5 VDC
- Output amperage: 4.0 ± 0.2 A
- AC line fuse rating: 10 A

Electrical specification, motor

- Motor type: brushless DC, gearless
- Motor voltage rating: 36 V
- Continuous power output: 250 W

Electrical specification, motor controller

- Control function: current, voltage, temperature, recuperation, speed, torque, dynamofunction motor
- Power supply light: 6 V, 7 W
- Position: in down tube

11.0 Warranty and safety notes

A2B Warranty

Definitions

The following definitions laid down in this provision apply to the warranty:

Goods mean: In conjunction with the A2B: the frame, the motor system (motor and motor controller), the lithium ion battery and all other components of the A2B with the exception of the tyres, hoses and brake pads.

A2B means: Light electric vehicle, manufactured and distributed by Hero Eco.

Periods mean: For the frame, five years as of delivery date of the A2B to you; for the motor system (motor and motor controller), two years as of the delivery date of the A2B to you; for the lithium ion battery, two years as of delivery date of the A2B to you; for all other A2B components with the exception of the tyres, hoses, brake pads, grips, chain, chain rings and sprockets, two years as of delivery date of the A2B to you.

Hero Eco means: Hero Eco Ltd.

You means: The original purchaser of the A2B from an authorised A2B specialist dealer.

Warranty

- Hero Eco guarantees that the goods upon delivery of the A2B to you and for the specified periods:
 - 2.1.1 are in agreement in all material respects with the relevant description, depending on any conditions or information in brochures, advertisement or in other documents:
 - are of satisfactory quality; 2.1.2
 - are suitable for the purposes specified by Hero Eco or for any appropriate purpose for which you utilise the goods;
 - 2.1.4 do not exhibit any significant defects with regard to the structure, material and processing;
 - satisfy all applicable legal and regulatory requirements with regard to sales of the goods in Europe.
- 2.2 Hero Eco grants this warranty in addition to your legal claims with regard to goods that are defective or do not satisfy the warranty conditions in other respect. Your local consumer advice centre or authority for consumer protection will provide you with information about your legal claims.
- 2.3 This warranty is not applicable in the event of defects to the goods:
 - 2.3.1 due to normal use and wear:
 - 2.3.2 due to intentional damage, accident or negligence by you or third parties;
 - 2.3.3 if your A2B was assembled by parties other than Hero Eco or an authorised A2B specialist dealer;

- 2.3.4 if you use the goods in a manner not recommended by Hero Eco, such as using the A2B for commercial purposes or in competitions or when training for such activities or events; owner's manual;
- 2.3.5 due to your disregarding our instructions, such as in case of any modifications, alterations or repairs which you carry out without prior written permission by Hero Eco.
- 2.4 The warranty is also applicable to any goods repaired by Hero Eco or goods which they have ordered as spare parts in the improbable event that the original goods were defective or could not fulfil this warranty in other respects.

3. Defective goods and return

- 3.1 Consult either an authorised A2B specialist dealer or Hero Eco directly at A2B@heroeco.com
- 3.2 Hero Eco will ask you to take the A2B together with your proof of purchase to an authorised A2B specialist dealer. At its own discretion, after having verified that the goods are defective, Hero Eco will:
 - 3.2.1 refund, in whole or in part, the costs for the defective goods, or
 - 3.2.2 replace the defective goods or
 - 3.2.3 repair the defective goods.

4. Limitation of liability

- 4.1 If you or Hero Eco do not abide by this warranty, then subject to provision 4.2 no party shall be liable for any of the resulting losses to the other party with the exception of losses representing a foreseeable consequence of non-compliance with this warranty.
- 4.2 Neither you nor Hero Eco shall be liable for losses due to Hero Eco's non-compliance with this warranty, specifically including the following:
 - 4.2.1 Loss of income or earnings;
 - 4.2.2 Loss of business;
 - 4.2.3 Loss of expected savings;
 - 4.2.4 Loss of data or
 - 4.2.5 Any lost time.
- 4.3 Provision 4.2, however, does not prevent claims with regard to foreseeable losses or damage to objects in your possession.
- 4.4 This provision in no way includes or limits the liability of Hero Eco for:
 - 4.4.1 Death or injuries due to negligence on the part of Hero Eco or
 - 4.4.2 Fraud or fraudulent misrepresentation or
 - 4.4.3 Any other matter in which it would be unlawful or illegal for Hero Eco to exclude its liability or to attempt such.

12.0 Disposal

Hero Eco supports the professional disposal and recycling of our products. In case of need, please take your vehicle or vehicle components to a local disposal facility. Our specialist dealer or customer service may support you with disposal. Please call your specialist dealer or our customer service for this purpose. If requested, Hero Eco will carry out the disposal for you.



13.0 Maintenance schedule

To ensure the proper functioning and safety of your A2B related therewith, you should have a service check carried out once a year, however, at least at the times indicated in the table. Please contact an A2B specialist dealer for this purpose and have the vehicle checked routinely. This also applies if you do not notice any problems or signs of wear and tear when using your A2B.

The check by your specialist workshop is documented in the following maintenance schedule. Therefore, please keep it in a safe place.

Checklist

The following pages contain the maintenance tables checked by your A2B specialist dealer at the following times:

- 1. Maintenance upon assembly
- 2. First inspection after 200, no later than after 300 km
- 3. Further maintenance: every 2,000 km

No.	Step	inspection
-	Component assembly: Frame-handlebars-stem-saddle post-saddle Check components for cracks and replace, if necessary Check screws on handlebars/stem/saddle Clean & lubricate saddle post pipe	×
2	Front fork Completely clean suspension fork, espec. sliding surfaces of the standpipes Check standpipes for damage, replace, if necessary	
м	Rear wheel slot Clean TMM4 sensor using air, without demounting it Check firm fit & state of the sensor plate Check axle screws for firm fit	××
4	Component assembly: Crank - inside bearing-pedal Clean crank & pedal / lubricate pedal axle Check sprocket for wear, replace, if necessary Check crank and pedal fastening for firm fit Check play of bottom bracket bearing, replace, if necessary Demount bottom bracket bearing, clean & lubricate casing & thread	×
ω	Component assembly: Chain-cassette-sprocket Clean all parts. Check all screws for firm fit Check components for wear, replace, if necessary Clean & lubricate chain	×
Θ	Component assembly: Wheels-rims-tyres Clean parts Check tyres for damage and tread Adjust tyre air pressure Check front and rear wheel rim for lateral and radial run-out, adjust, if necessary Check spoke tension, adjust, if necessary Check functioning & bearing play of front wheel hub.	×
43		

44 N	Step	inspection
7	Steering head • Check bearing play of steering head and adjust or replace, if necessany	×
ω	Component assembly: Derailleur system • Clean and lubricate derailleur mechanism and derailleur. • Check derailleur system cord and outer shells for state and function, replace, if necessary • Check derailleur mechanism adjustment, adjust, if necessary • Check all screws on the derailleur mechanism/derailleur for firm fit	××
0	Component assembly: Brake system • Clean brake bosses. • Check brake pads, replace, if necessary • Check brake pressure, refill brake oil, if necessary • Check brake system for tightness. • Check brake system screws for firm fit • Check brake function and efficiency	***
10	Guard plates-luggage rack-side stand-lighting system Tighten all screws Check lighting system for functioning & setting, adjust, if necessary	**
Ξ	Component assembly: electrical drive system & lock Check lines for proper fastening, breakings, chafing, bends, replace, if necessary Check plug contacts for corrosion and scaling, clean or replace, if necessary	×
	 Check cable joints for correct connection Check display for functioning & error codes Run current software update Check battery state and charge Check alignment & state of the battery slide rails, adjust/replace, if necessary Check locking cylinder on battery slot for functioning, clean and lubricate Check brake switch/motor stop switch for functioning 	× ×

No.	Step	inspection
	Component assembly: Frame-handlebars-stem-saddle post-saddle Check components for cracks and replace, if necessary Check screws on handlebars/stem/saddle Clean & lubricate saddle post pipe	××
Q	Front fork Completely clean suspension fork, espec. sliding surfaces of the standpipes Check standpipes for damage, replace, if necessary	×
м	Rear wheel slot Clean TMM4 sensor using air, without demounting it Check firm fit & state of the sensor plate Check axle screws for firm fit	× ×
4	Component assembly: Crank - inside bearing-pedal Clean crank & pedal / lubricate pedal axle Check sprocket for wear, replace, if necessary Check crank and pedal fastening for firm fit Check play of bottom bracket bearing, replace, if necessary Demount bottom bracket bearing, clean & lubricate casing & thread	×××
Ω	Component assembly: Chain-cassette-sprocket Clean all parts. Check all screws for firm fit Check components for wear, replace, if necessary Clean & lubricate chain	×××
ω	Component assembly: Wheels-rims-tyres Clean parts Check tyres for damage and tread Adjust tyre air pressure Check front and rear wheel rim for lateral and radial run-out, adjust, if necessary Check spoke tension, adjust, if necessary Check functioning & bearing play of front wheel hub. Demount, clean and lubricate hub	××× ××
45		

46 2	Stan	incipention
2	Steering head Check bearing play of steering head and adjust or replace, if necessary	×
ω	Component assembly: Derailleur system • Clean and lubricate derailleur mechanism and derailleur. • Check derailleur system cord and outer shells for state and function, replace, if necessary • Check derailleur mechanism adjustment, adjust, if necessary • Check all screws on the derailleur mechanism/derailleur for firm fit	× ××
o o	Component assembly: Brake system Clean brake bosses. Check brake pads, replace, if necessary Check brake pressure, refill brake oil, if necessary Check brake system for tightness. Check brake system screws for firm fit Check brake function and efficiency	***
10	Guard plates-luggage rack-side stand-lighting system Tighten all screws Check lighting system for functioning & setting, adjust, if necessary	××
=	Component assembly: electrical drive system & lock Check lines for proper fastening, breakings, chafing, bends, replace, if necessary Check plug contacts for correct connection Check cable joints for correct connection Check display for functioning & error codes Run current software update Check battery state and charge Check alignment & state of the battery slide rails, adjust/replace, if necessary Check locking cylinder on battery slot for functioning, clean and lubricate Check brake switch/motor stop switch for functioning	× ××× ×× ×

<u>o</u>	Step	inspection	
	Component assembly: Frame-handlebars-stem-saddle post-saddle Check components for cracks and replace, if necessary Check screws on handlebars/stem/saddle Clean & lubricate saddle post pipe	***	
	Front fork • Completely clean suspension fork, espec. sliding surfaces of the standpipes • Check standpipes for damage, replace, if necessary	× ×	
	Rear wheel slot • Clean TMM4 sensor using air, without demounting it • Check firm fit & state of the sensor plate • Check axle screws for firm fit	×××	
	Component assembly: Crank - inside bearing-pedal Colean crank & pedal / lubricate pedal axle Check sprocket for wear, replace, if necessary Check crank and pedal fastening for firm fit Check play of bottom bracket bearing, replace, if necessary Demount bottom bracket bearing, clean & lubricate casing & thread	***	
	Component assembly: Chain-cassette-sprocket Clean all parts. Check all screws for firm fit Check components for wear, replace, if necessary Clean & lubricate chain	××××	
	Component assembly: Wheels-rims-tyres Clean parts Check tyres for damage and tread Adjust tyre air pressure Check front and rear wheel rim for lateral and radial run-out, adjust, if necessary Check spoke tension, adjust, if necessary Check functioning & bearing play of front wheel hub. Demount, clean and lubricate hub	×××× ×××	Tarthor maintenance. every 2,00
47			, , , , , , , , , , , , , , , , , , , ,

48 °	Step	inspection
7	Steering head • Check bearing play of steering head and adjust or replace, if necessary	×
ω	Component assembly: Derailleur system • Clean and lubricate derailleur mechanism and derailleur. • Check derailleur system cord and outer shells for state and function, replace, if necessary • Check derailleur mechanism adjustment, adjust, if necessary • Check all screws on the derailleur mechanism/derailleur for firm fit	×× ××
0	Component assembly: Brake system • Clean brake bosses. • Check brake pads, replace, if necessary • Check brake pressure, refill brake oil, if necessary • Check brake system for tightness. • Check brake system screws for firm fit • Check brake function and efficiency	****
10	Guard plates-luggage rack-side stand-lighting system Tighten all screws Check lighting system for functioning & setting, adjust, if necessary	××
=	Component assembly: electrical drive system & lock • Check lines for proper fastening, breakings, chafing, bends, replace, if necessary • Check plug contacts for corrosion and scaling, clean or replace, if necessary • Check cable joints for correct connection • Check display for functioning & error codes • Run current software update • Check battery state and charge • Check battery state and charge • Check lignment & state of the battery slide rails, adjust/replace, if necessary • Check locking cylinder on battery slot for functioning, clean and lubricate • Check brake switch/motor stop switch for functioning	× × ××× × ××

O	Step	inspection
Date	Signature / stamp of the A2B specialist workshop	after 4,000 km
Date	Signature / stamp of the A2B specialist workshop	after 6,000 km
Date	Signature / stamp of the A2B specialist workshop	after 8,000 km
Date	Signature / stamp of the A2B specialist workshop	after 10,000 km
Date	Signature / stamp of the A2B specialist workshop	after 12,000 km
Date	Signature / stamp of the A2B specialist workshop	after 14,000 km
Date	Signature / stamp of the A2B specialist workshop	after 16,000 km
Date	Signature / stamp of the A2B specialist workshop	after 18,000 km
Date	Signature / stamp of the A2B specialist workshop	after 20,000 km

13.0 Owner registration

You should immediately fill out and return your owner card or register online at www.wearea2b.com so that we can keep you informed of important issues in the future. Thank you.	Please keep this information in a safe place for future reference.
•	Date of purchase:
Your A2B and certain key components have unique serial numbers.	,
Record these serial numbers for warranty purposes or in	Selling dealer:
case your vehicle is ever lost or stolen. Vehicle serial number is located on the underside of the frame near the pedal crank.	Street Address:
	City/post code:
Vehicle serial number:	Talambanas
Motor serial number is engraved to the left side of the motor hub.	Telephone:
Motor Senai number is engraved to the left side of the motor hub.	Sales person:
Motor serial number:	

To fully protect your A2B against theft, buy a high quality bicycle lock and chain. Secure your A2B to a stationary object every time it is left unattended and also lock your front and rear wheel and motor to the frame.

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